

REMARKS

Claims 1 through 19, as amended, are pending in the application. Claims 6, 8, 9, and 16-19 have been amended to address a rejection under 35 U.S.C. § 112, second paragraph. In particular, claims 6, 8, 9, and 16 have been amended to address antecedent basis issues. Claims 17 and 18 have been amended to recite, as a series of active, positive steps, the method originally claimed. The amendment of claims 17 and 18 also addresses a rejection under 35 U.S.C. § 101. No new matter has been added by the foregoing amendments.

Claim Rejections – 35 U.S.C. § 112

Claims 6, 8-11, and 16-19 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, claims 6, 8, 9, 16, and 19 were rejected based upon antecedent basis issues. Claims 6, 8, 9, 16, and 19 have been amended to address the antecedent basis issues. Claims 17-19 were rejected based upon failure of the method claims to recite active, positive steps delimiting the method. Claims 17 and 18 have been amended to recite the method of the original claims as a series of active, positive steps.

With the foregoing amendments Applicants respectfully submit that claims 6, 8-11, and 16-19 are in full compliance with the requirements of 35 U.S.C. § 112. Accordingly, Applicants request that the rejection of claims 6, 8-11, and 16-19 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim Rejection – 35 U.S.C. § 101

The Examiner has rejected claims 17-19 under 35 U.S.C. § 101 as presenting an improper process claim. As noted above, claims 17 and 18 have been amended to recite the method of the original claims as a series of active, positive steps. As amended, Applicants respectfully submit that claims 17 and 18, and claim 19 depending from either claim 17 or claim 18, present proper method claims in accordance with the requirements of 35 U.S.C. § 101. Accordingly, Applicants request that the rejection of claims 17-19 under 35 U.S.C. § 101 be withdrawn.

Claim Rejections – 35 U.S.C. § 103 – claims 1, 2, 4-6, 9, 11, 12, 17, and 19

The Examiner has rejected claims 1, 2, 4-6, 9, 11, 12, 17, and 19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,179,709 (Brecht) in view of U.S. Patent No. 4,665,867 (Iwamoto *et al.*, hereinafter “Iwamoto”). The Examiner contends that Brecht discloses the claimed invention except for details of the water passage. The Examiner further contends that Iwamoto teaches an engine with a side water passage as shown in Fig. 2 of Iwamoto. The Examiner asserts that it would have been obvious to one of ordinary skill in the pertinent art to modify the engine of Brecht to include a side water passage as taught by Iwamoto, to provide adequate cylinder cooling. The rejection of claims 1, 2, 4-6, 9, 11, 12, 17, and 19 under 35 U.S.C. § 103(a) is respectfully traversed.

Brecht discloses an internal combustion engine having a cylinder block 1. In particular, the invention of Brecht is disclosed to be applied to a two-cycle Diesel engine. Air is supplied under pressure to engine piston cylinders from a blower 36 via an air box 4 and air inlet ports 3. A water pump 50 is disclosed to be mounted to the blower 36, on either of two ends of the blower 36 (see page 2, first column, lines 71-75, and Fig. 3). The manner of cooling of the engine cylinders is not discussed in Brecht. Pistons within the cylinders connect to a crankshaft 11.

Brecht further discloses, at page two, lines 25-34:

[a]ccording to the invention, the cylinder head 5 is turnable through 180° in relation to the cylinder block 1, to bring the exhaust manifold on the same side, or the opposite side of the engine as the blower 36, and the cylinder block is turnable through 180° in relation to the crankshaft 11 with its flywheel 16, to bring the blower on the right or left hand side of the engine as seen from the flywheel end of the engine.

Brecht thus discloses that the cylinder block 11, **along with the blower 36 (and the water pump 50 attached to the blower 36)**, may be rotated 180 degrees relative to the crankshaft. Brecht **does not disclose** that the blower 36 (and the water pump 50) is capable of being mounted to the cylinder block at multiple locations.

Iwamoto discloses a cooling structure for a multi-cylinder piston-engine cylinder block. In particular, Iwamoto discloses a side coolant gallery or manifold having variable cross-section (see, for example, Fig. 3) and feeding a water jacket surrounding engine cylinders. The water jacket is fed through multiple inlets. The flow cross-section of the coolant gallery is disclosed to decrease toward the downstream end of the coolant gallery. Iwamoto discloses that the variable flow cross-section ensures uniform flow through each of the coolant inlets (see column 2, lines 57-60). The coolant gallery is disclosed to have a single inlet in communication with a water pump at upstream end, and is further disclosed to be closed at the downstream end (see Figs. 3 and 4).

Independent claim 1 as amended recites, *inter alia*,

...

the side water passage (3) has front and rear end portions provided with **front and rear openings (3a) and (3b) which communicate the side water passage (3) with a water pump (10)**, (emphasis added)

Similarly, independent claim 17 as amended recites, *inter alia*,

...

the side water passage (3) having front and rear end portions formed with **front and rear end openings (3a), (3b) which communicate the side water passage (3) with the water pump (10)**, (emphasis added)

The present invention as claimed provides a number of advantages. First, it is possible to produce a single engine block for use with assembled engines with water pumps disposed at either a front or a rear end. Second, compactness of the assembled engine is improved, compared to an arrangement where a connection pipe must be provided to connect a water pump at one end of the engine block to an port remote from that end of the engine block. Third, there is no need to provide a port opening in the side of the engine block.

Brecht fails to disclose, teach, or suggest at least the feature of claims 1 and 17 of a side water passage having front and rear openings which communicate with a water pump. As noted above, Brecht is silent regarding cooling of the engine cylinders, disclosing simply a water pump

attached to a blower which is in turn attached to a cylinder block. Brecht discloses that the cylinder block, blower, water pump assembly may be rotated 180 degrees relative to a crankshaft. Brecht is silent regarding cooling of the engine cylinders, and clearly does not disclose, teach, or suggest a side water passage having front and rear openings.

Iwamoto likewise fails to disclose, teach or suggest at least the feature of claims 1 and 17 of a side water passage having front and rear openings. The side coolant gallery of Iwamoto is disclosed to have a single opening at the upstream end. The downstream end is disclosed to be closed.

Brecht and Iwamoto, either alone or in the proposed combination, fail to teach, disclose or suggest all of the elements of claims 1 and 17. It is therefore respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claim 1 (or claims 2, 4-6, 9, 11, or 12 depending from claim 1) or with respect to claim 17 (or claim 19 depending from claim 17). Accordingly, it is requested that the rejection of claims 1, 2, 4-6, 9, 11, 12, 17, and 19 under 35 U.S.C. § 103(a) be withdrawn.

Claim Rejections – 35 U.S.C. § 103 – claims 1-19

The Examiner has rejected claims 1-19 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application Publication No. 2004/0187807 A1 (Aketa *et al.*) in view of Brecht. The Examiner notes that Aketa is assigned to the same assignee, Kubota Corporation, as the present application. The Examiner states that Aketa constitutes prior art only under 35 U.S.C. § 102(e). The Examiner further notes that the rejection might be overcome by showing that the Aketa reference is disqualified under 35 U.S.C. § 103(c). Applicants respectfully traverse the rejection of claims 1-19 under 35 U.S.C. § 103(a).

As noted by the Examiner, Aketa shares a common assignee with the present application. 35 U.S.C. § 103(c)(1) states that a reference qualifying as prior art under 35 U.S.C. § 102(e) shall not preclude patentability under 35 U.S.C. § 103 where the reference and the claimed invention were commonly owned at the time the claimed invention was made. Pursuant M.P.E.P. § 706.02(1)(2) II, the undersigned hereby states that the present application and Aketa

were, at the time the invention of the present application was made, owned by Kubota Corporation. To further support this fact, a Statement of Common Ownership under 35 C.F.R. § 3.73(b) is filed herewith, establishing that Aketa and the present application are both assigned to Kubota Corporation, and that Aketa was assigned to Kubota Corporation at the time of filing of the present application. Applicants respectfully submit that Aketa is not prior art relative to the current application under 35 U.S.C. § 103. Accordingly, Applicants request that the rejection of claims 1-19 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the foregoing amendment and remarks, Applicant respectfully submits that the present application, including claims 1-19, is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,

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